Introduction to Innovation

Knut Hinkelmann

Innovative Products? – a first glimpse

- What is innovation?


Innovation is:
"The application of
IDEAS
That are novel
and useful"
David Burkus
@davidburkus
idea to value.com


Innovation is:
"Turning an idea into a solution
that adds value
from a customer's perspective"
Nick Skillicorn
@improvides
idea to value.com


Innovation is:
"Creativity is thinking of something new.
Innovation is the implementation of something new"
Paul Sloane
@PaulSloane
idea to value.com


Innovation is:
"the fundamental way the company brings constant value to their customer's business or life, and consequently their shareholders and stakeholders"
Paul Hobcraft
@Paul4innovating
idea to value.com

INNOVATION
IS THE ART OF ESTABLISHING
SOMETHING DIFFERENT OR NEW
OUT IN THE REAL WORLD
THAT HAS A SIGNIFICANT IMPACT

Two Components of Innovation

Business component + **Engineering** component

Disruptive Innovation

Disruption displaces an existing market, industry, or technology and produces something new and more efficient and worthwhile. (Clayton Christensen)

- Disruption is at once destructive and creative.
- Innovation vs. Disruption
  - Innovation and disruption are similar in that they both create something new.
  - Disruptors are innovators, but not all innovators are disruptors

Carolin Howard, 2013, Disruption Vs. Innovation: What's The Difference?
http://www.forbes.com/sites/carolinehoward/2013/03/27/you-say-innovator-i-say-disruptor-whats-the-difference

- inbound disruption: being disruptive

- outbound disruption: being disrupted

Example 1 – “Uberization” – Disrupting Taxis

- **History**
  - Trigger: In 2008 Travis Kalanick was not able to find a cab in Paris, France
  - 2009: Uber was founded as "UberCab" by Travis Kalanick and Garrett Camp
- **Disruption:**
  - Uber does not own cars
  - Broker between passenger and driver (car owner)

Why was Uber disruptive?

1. **Business:** Understand the «real» customer need
   - ♦ instead of obvious problem: ~~«How to find a taxi»~~
   - ♦ basic need: «individual transfer from A to B»

2. **Engineering:** Exploit appropriate technologies
   - ♦ Connectivity: Connect drivers with clients
   - ♦ Mobile: Access everywhere (smartphones)
   - ♦ Easy payment
   - ♦ …

Example 2 – Digital Cameras

Kodak

Situation

- Kodak was a leading company in photography

Disruption

- Kodak lost its market strength because of digital photography

Why was Kodak disrupted?

- Successful in Engineering but failing in Business

1. Engineering

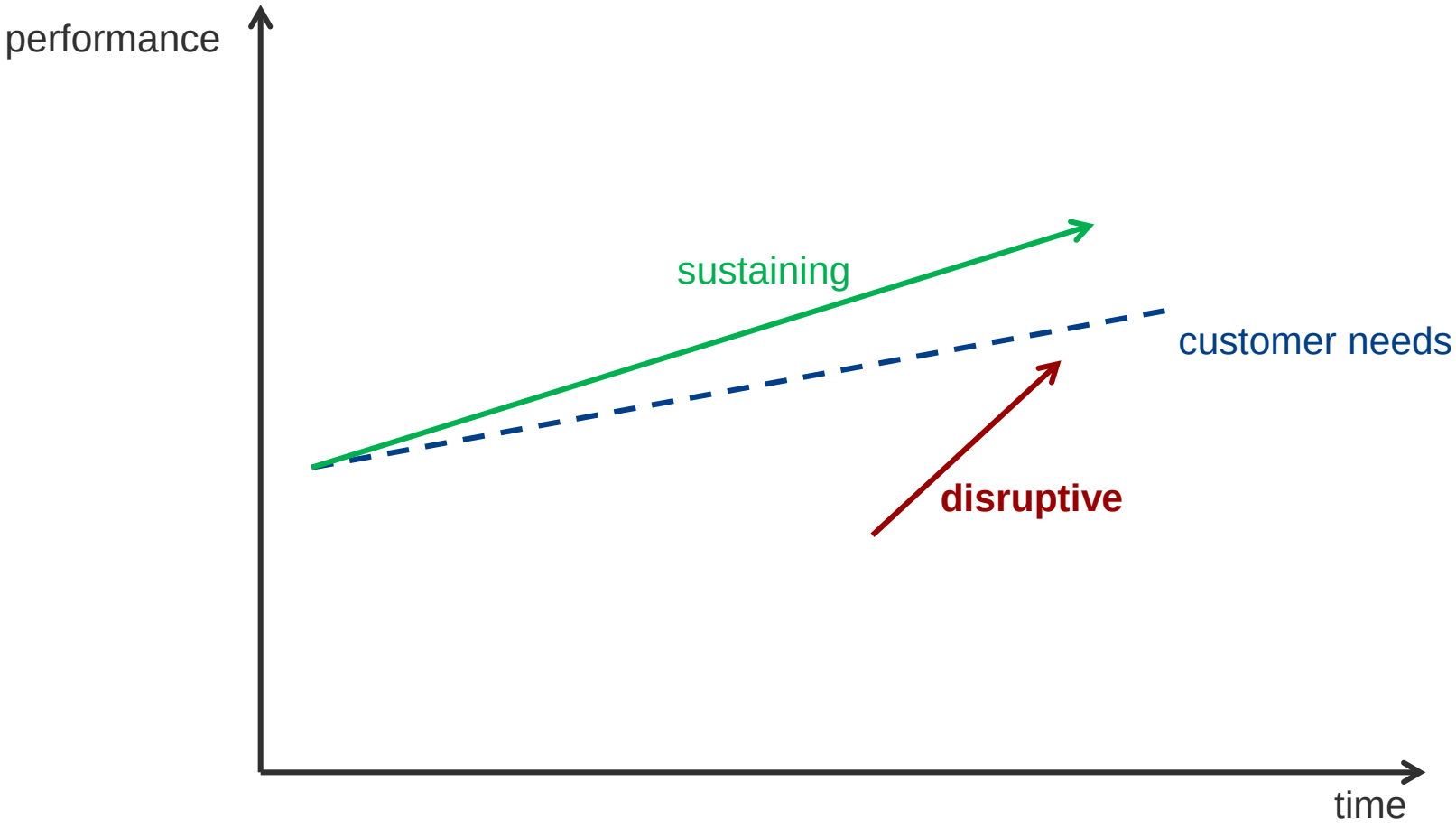
- Kodak was the inventor of the digital camera

2. Business

- «Good» management practice *)
  - Please needs of (current) customers
  - Exploit strength: Kodak was a chemical company
- But: New markets
  - Digital storage on PC
  - Smartphone with cameras

*) See Clayton Christensen (2000) The Innovator's Dilemma, Harper Business.

Potential of Disruption



Disruption is less performant (in engineering and business) than sustaining technologies, but has the potential to outperform in the future


Innovation is:
"a feasible relevant offering such as a product, service, process or experience with a viable business model that is perceived as new and is adopted by customers"
CLOSED
Gijs Van Wulfen
@gijsvanwulfen
idea to value.com

Innovation and Design Thinking

"No good product was ever created from quantitative market research. Great products spring from the heart and soul of a great designer, unencumbered by committees, processes, or analyses.“

Martin, R., 2010.
Design thinking: achieving insights via the “knowledge funnel.” *Strategy & Leadership*, 38(2), pp.37–41.

“It's really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them.”

Steve Jobs


DESIGN

Design Thinking

- **Solution-focused**: starting with a goal (a better future situation) instead of solving a specific problem.
- **Divergent thinking** (explore many possible solutions) and **convergent thinking** (narrow down to final solution).
- **Iterative**: intermediate solutions are potential starting points of alternative paths (including redefining of the initial problem)
  - ♦ design = re-design

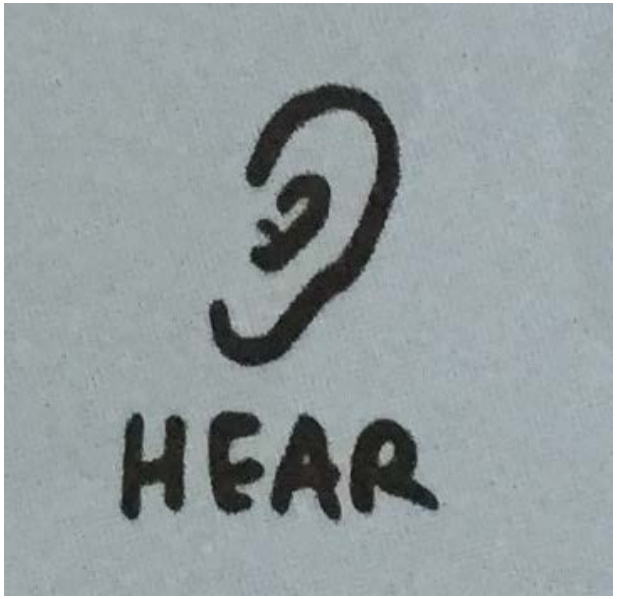
Design Thinking

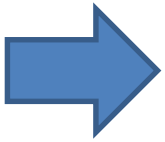
Design …

- is viewed as a problem-solving process
- involves players from multiple disciplines

A design process has “recognizable phases, and these, while not always in the same order, nearly always begin with analytic phases of search and understanding, and end with synthetic phases of experimentation and invention.”

Charles Owen, “Considering Design Fundamentally,” *Design Processes Newsletter*, 5/3 (1993): 2

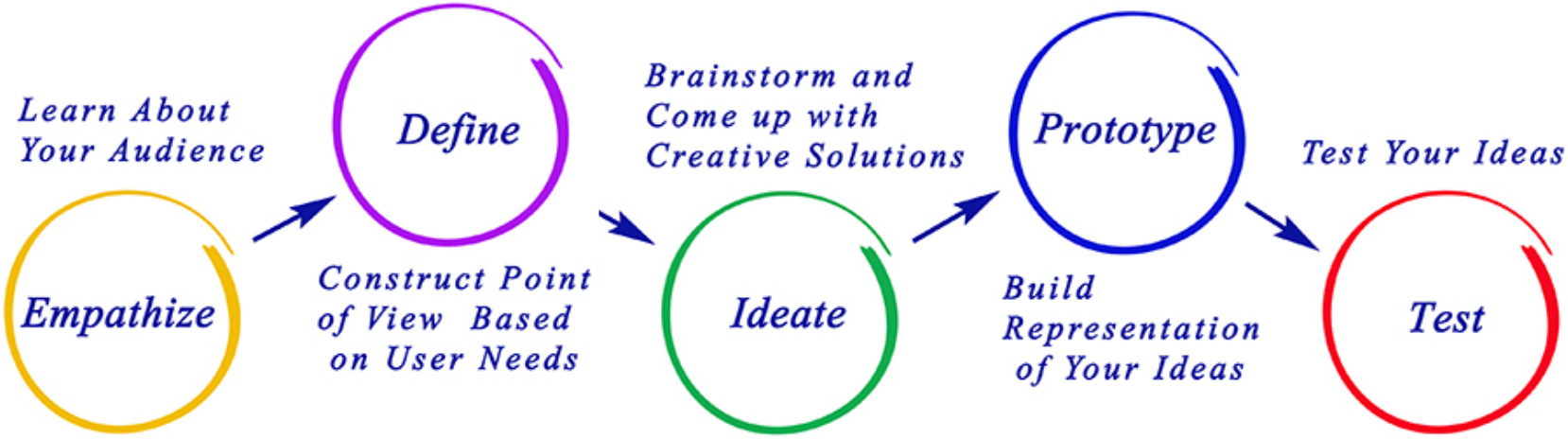




Deal with real user problem

Provide right reature for right people

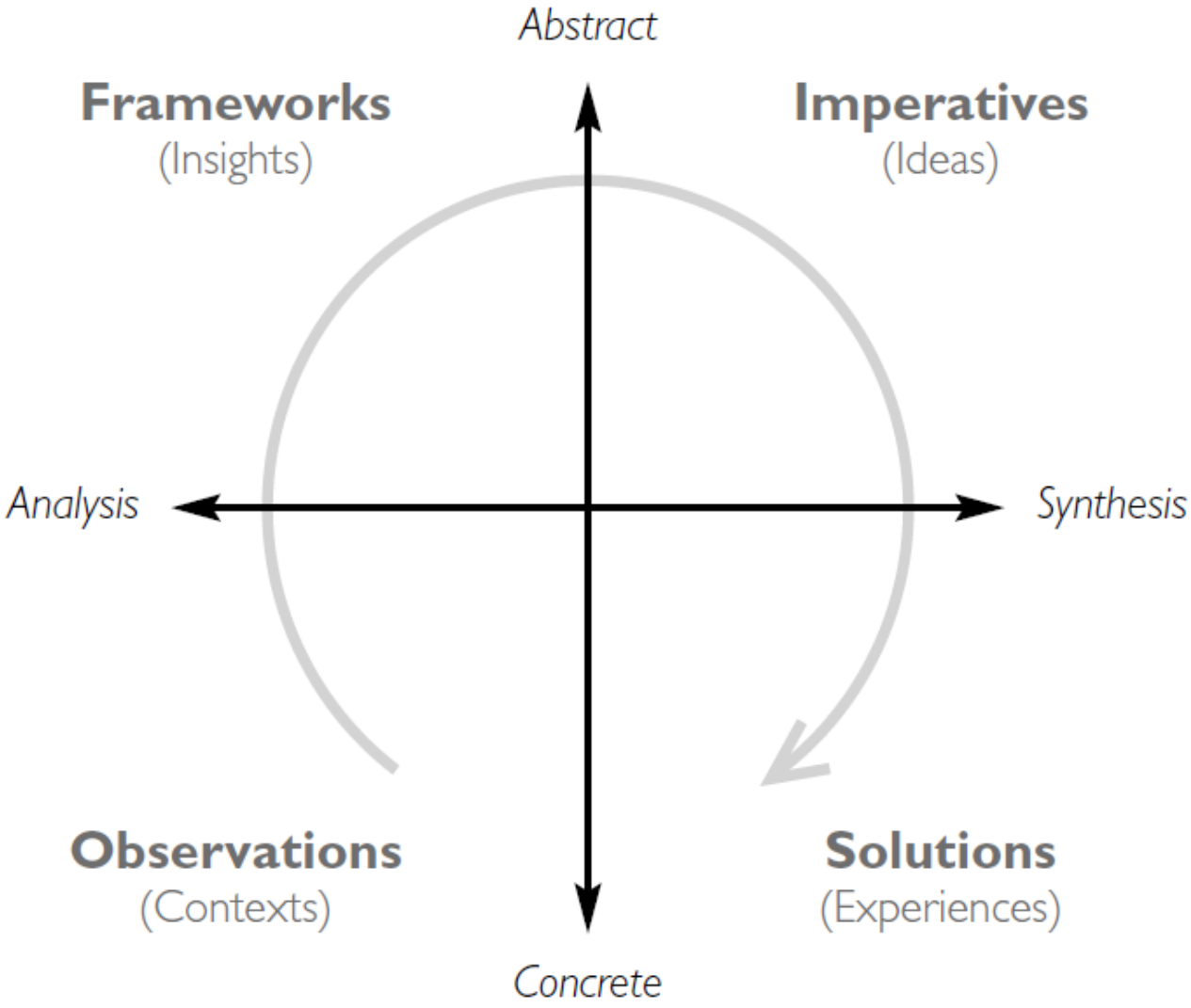
Design Thinking Process



Deal with real user problem

Provide right reature for right people

Embedding Design Thinking into Innovation Process



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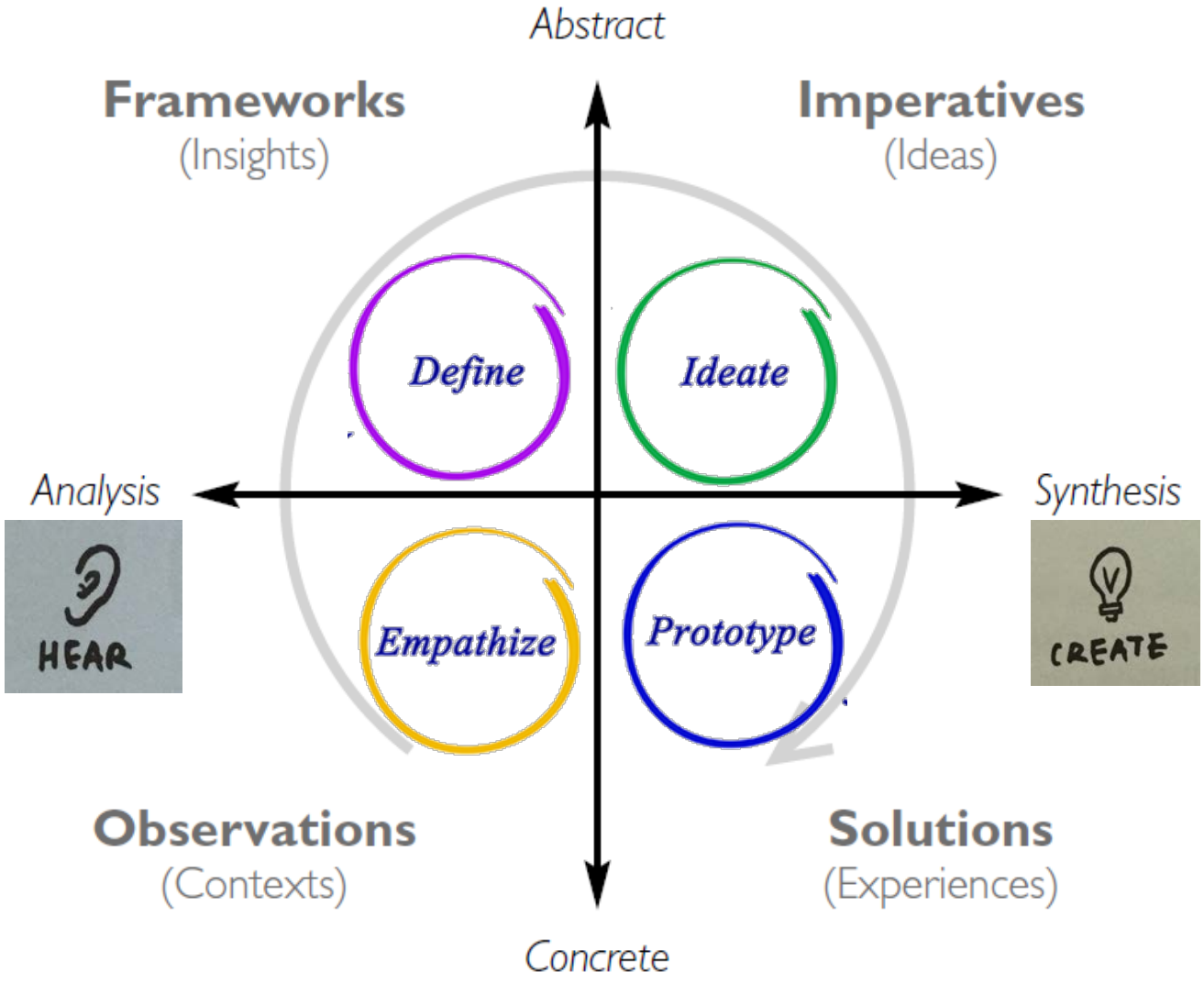
Embedding Design Thinking into Innovation Process



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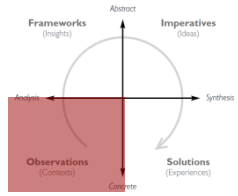
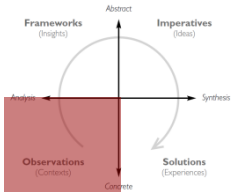
1. Observations - Emphasize



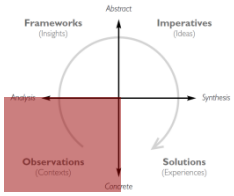
- Analysis in a Concrete World
- Thorough understanding of customer and user needs
- Seek to understand
  - ***how*** a product or service is being used, and **how** its benefits are derived in the context of use
  - ***why*** users act as they do, and how users make sense of what they do - for themselves and for others.

Beckman, S.L. & Barry, M., 2007. Innovation as a Learning Process: Embedding Design Thinking. *California Management Review*, 50(1), pp.25–56.

Methods

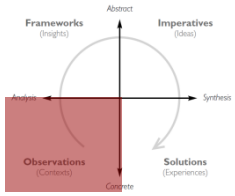


- Observation
- Interviews
- Focus groups
- Workshops
- Surveys/questionnaires
- Quantitative (market) research



"You can't just ask customers what they want and then try to give that to them. By the time you get it built, they'll want something new.“ Steve Jobs

“If I had asked people what they wanted, they would have said faster horses.” Henry Ford



How to find out, what customers need and want

- Indirect: Ask customers' for preferences and opinion
  - Surveys
  - Interpretivism

- **Direct: Look at customers' behaviour and problems**
  - **Observation**
  - **Positivism**

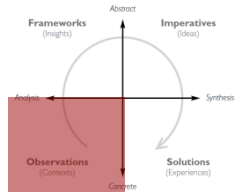
Better …

- **Observe reality** vs. ask for opinion
- **Understand** what is going on

Customer Centric

- Understand your customer
- You cannot do this from your desk
- You have to go out

Observation



Observe behavior

↓

Discover the underlying meanings behind behavior

↓

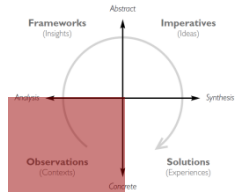
Understand feelings and intentions

↓

Deduce logical implications for strategic decisions

Beckman, S.L. & Barry, M., 2007. Innovation as a Learning Process: Embedding Design Thinking. *California Management Review*, 50(1), pp.25–56.

Eliciting Stories



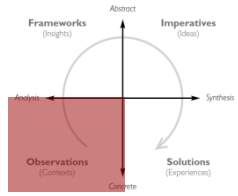
- The observer elicits and listens to stories, particularly stories that involve
  - ♦ contradictions or workarounds,
  - ♦ spoken and unspoken norms (that if not met, may jeopardize the success of the innovation)
  - ♦ success and failure.
- To elicit these stories the observer must be naïve, ask probing questions, and strive to ***understand why***

Beckman, S.L. & Barry, M., 2007. Innovation as a Learning Process: Embedding Design Thinking. *California Management Review*, 50(1), pp.25–56.

The Role of Interviews, Focus Groups, Surveys

- Interviews, focus groups, workshops and surveys can be used as means for observations, if
  - ♦ Asking for concrete behaviour and facts, e.g.
    - How do you …
    - How did you …
    - when did you … the last time
    - Did you ever …
  - ♦ Not asking for opinions and estimations
    - What would …
    - How do you rate …

Role of quantitative research



"Observations may be supplemented by quantitative market research, but such research must be guided by the understanding developed through direct interaction with customers and users."

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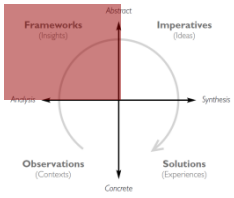


2. Frameworks - Define

Understanding the Problem

- Move from the concrete to the abstract realm
- attempt to make sense of the data that was collected
- framing and reframing data to identify patterns of behavior
- find out what is missing

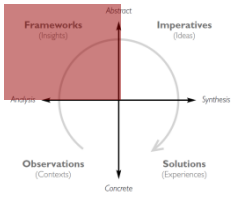
→ create models that yield insights

→ come up with a new way of seeing the problem

Define a Problem

- Combine all the insights collected at the time of listening and observing people.
- Start to synthesize and face the challenge ahead of us.
- Framing a problem in a clear manner
- end up devising solutions and exploring opportunities.

Methods for Framing

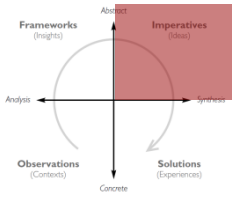


- Identify interesting stories
  - ♦ extract a set of user needs
- Identify interesting dimensions of user behavior
  - ♦ Determine customer groups to focus on
- Create timelines

3. Imperatives – Ideate

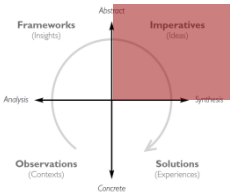
- Search for methods to handle the problem.
- Spur as many ideas as possible, don’t ignore ideas that seem obvious or easy.
- Look into each and every idea with a fresh mindset.
- A multi-disciplinary team approach to brainstorming is encouraged that brings across varied outlooks.
- Shortlist the best solutions and leave the rest.

Propose Principles of Possible Solutions



- Analyse different aspects
  - ♦ Determine improvement potential/what is missing
    - Usability, efficiency, effectiveness, emotions ..
- Result:
  - ♦ Very high-level specification for the design
- Forms:
  - ♦ Small set of selected user needs
  - ♦ **Value Proposition**: benefits for customers
  - ♦ Design principles

Imperatives – An Example

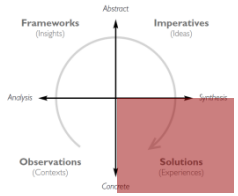


- When Hewlett-Packard came up with its first DeskJet, the product development team was charged with developing a

  “laser-quality printer that prints on plain paper for under $1,000.”

- This statement clearly communicates the benefits for the customer (value proposition):
  - ♦ High quality
  - ♦ plain paper
  - ♦ low price
- It still leaves room for the development team to make its own choices,

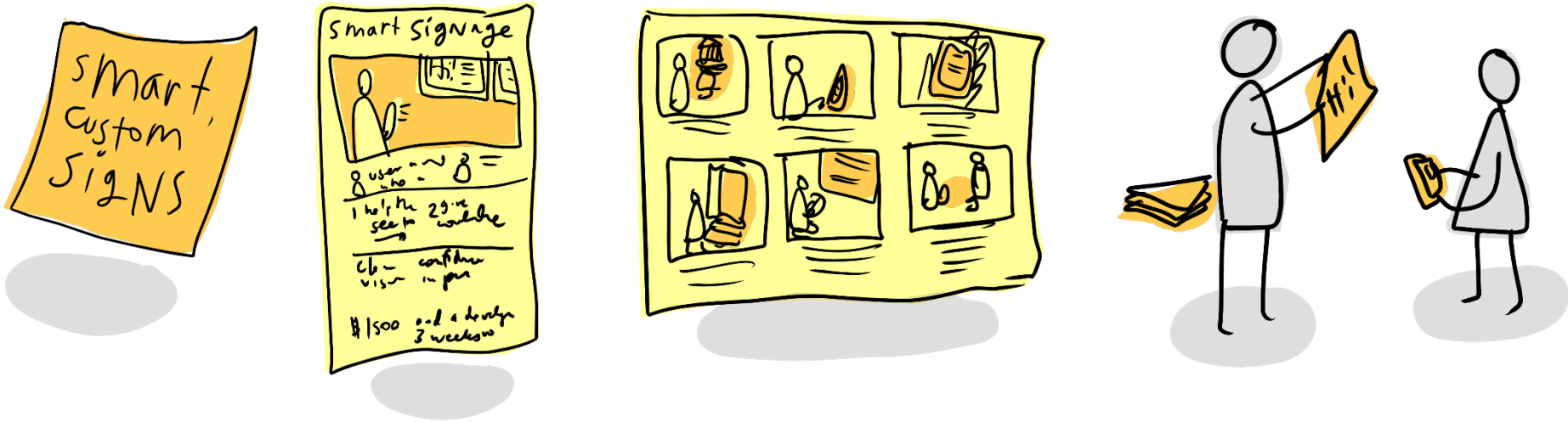
4. Solutions - Prototypes



- Synthesis of a product or service that
  - ♦ is compatible with the design imperatives
  - ♦ firmly connects back to the observational research!
- Product / service design
  - ♦ Prototyping
  - ♦ Agile & iterative development

Prototyping

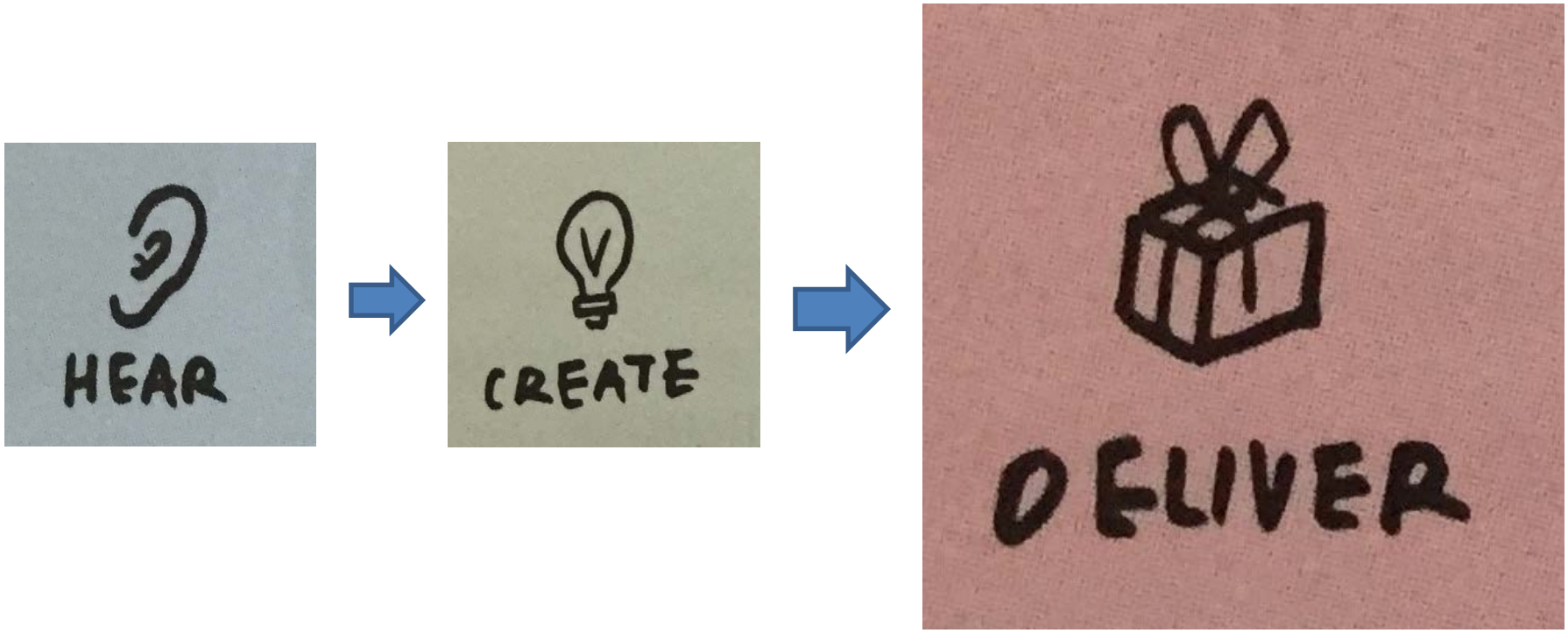
- Create rough drafts of solutions to decide if these will prove beneficial for the problem
- Methods: sketching or rapid prototyping
- Follow a simple, speedy and economical approach while prototyping.



Test

- Test the prototype with the customers
- Monitor the response and deem whether the solution satisfied them or not.

Hear – Create - Deliver



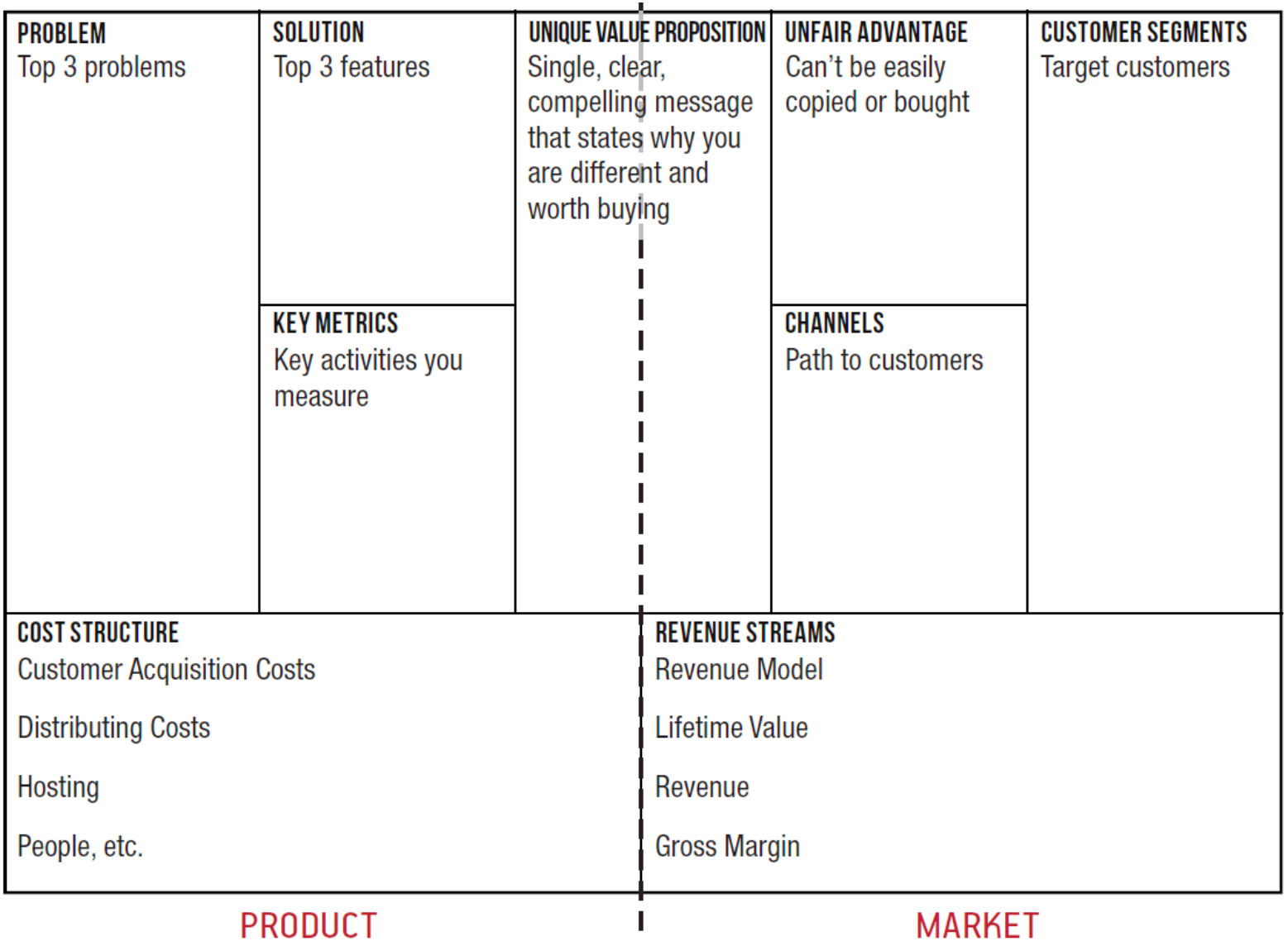
Three Stages of a Startup

- Stage 1: Do I have a problem worth solving?
- Stage 2: Have I built something people want?
- Stage 3: How do I accelerate growth?

(Maurya 2012)

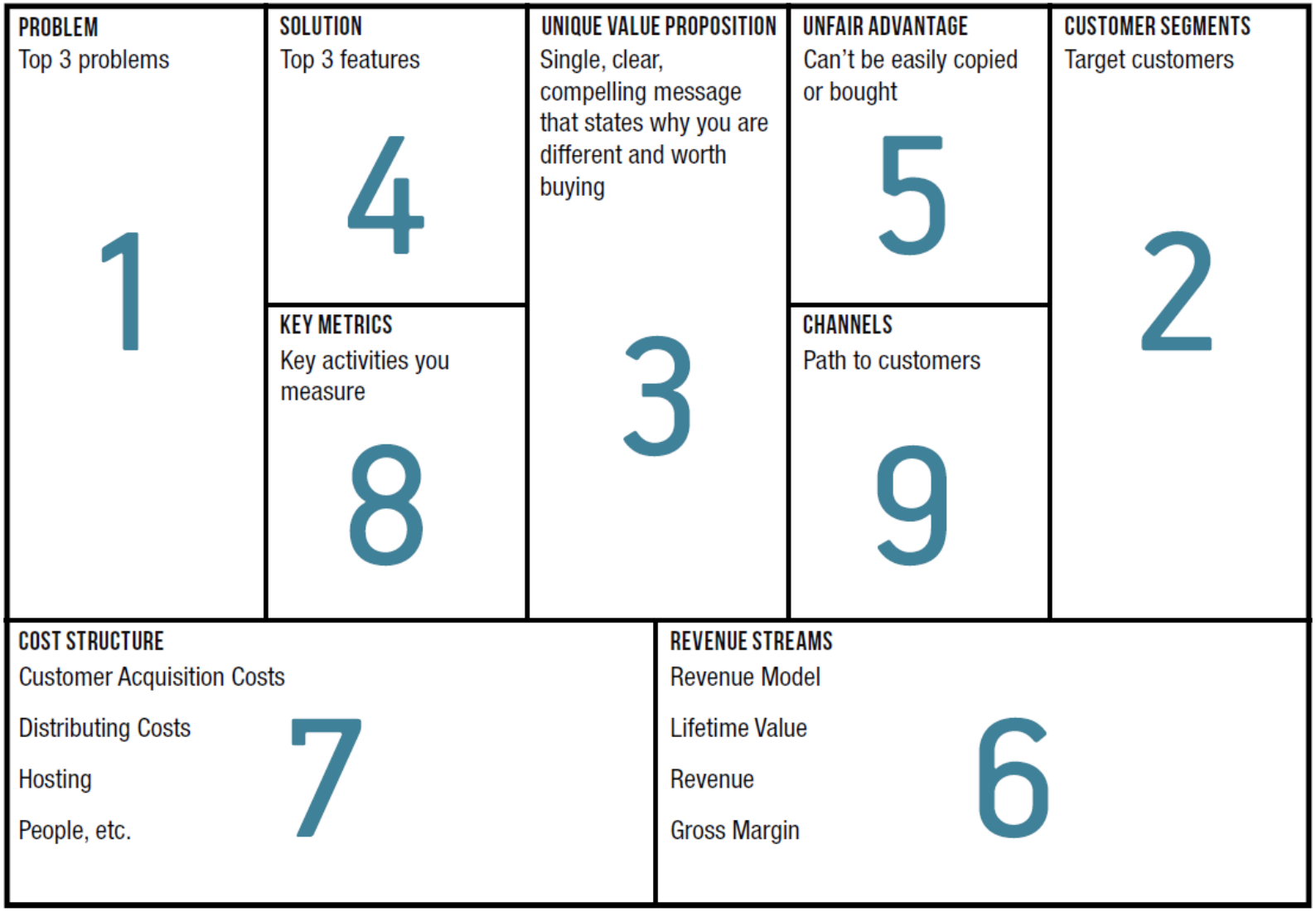
Document your Plan: The Lean Canvas

- The Lean Canvas is a variant of the business model canvas
- Entrepreneur-focused: It has an emphasis on finding customer problems worth solving.
- Its purpose is to sketch, share and refine new business ideas
- It is guided by problems of customer segments



(Maurya 2012)

The oder of filling the Lean Canvas

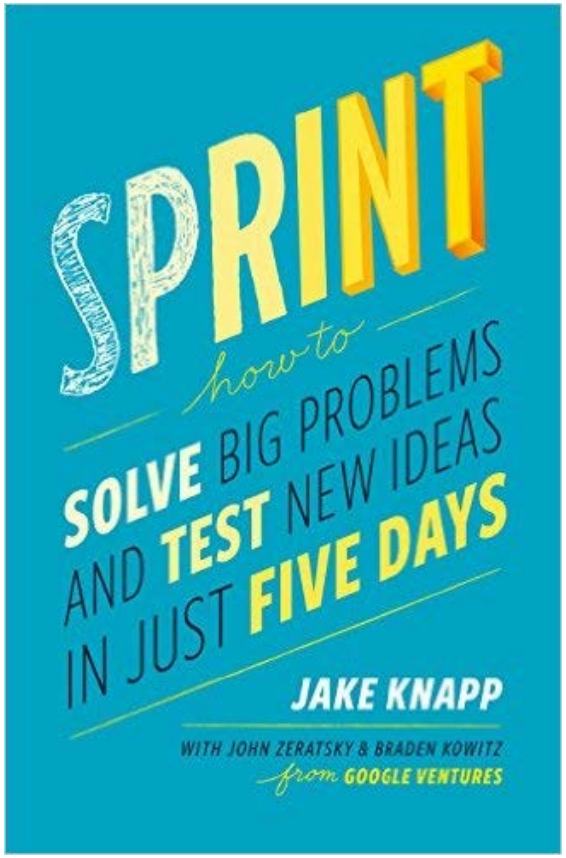


(Maurya 2012)

Keep in mind

- **Observe the real situation**
  - ♦ Understand your customer
  - ♦ You cannot do this from your desk – go out
  - ♦ Ask questions to clarify the challenges
- **Go wide before you go deep**
- **Sketch out several drafts**: *What would it look like if …..*
- **Do NOT fall in love with your first idea**

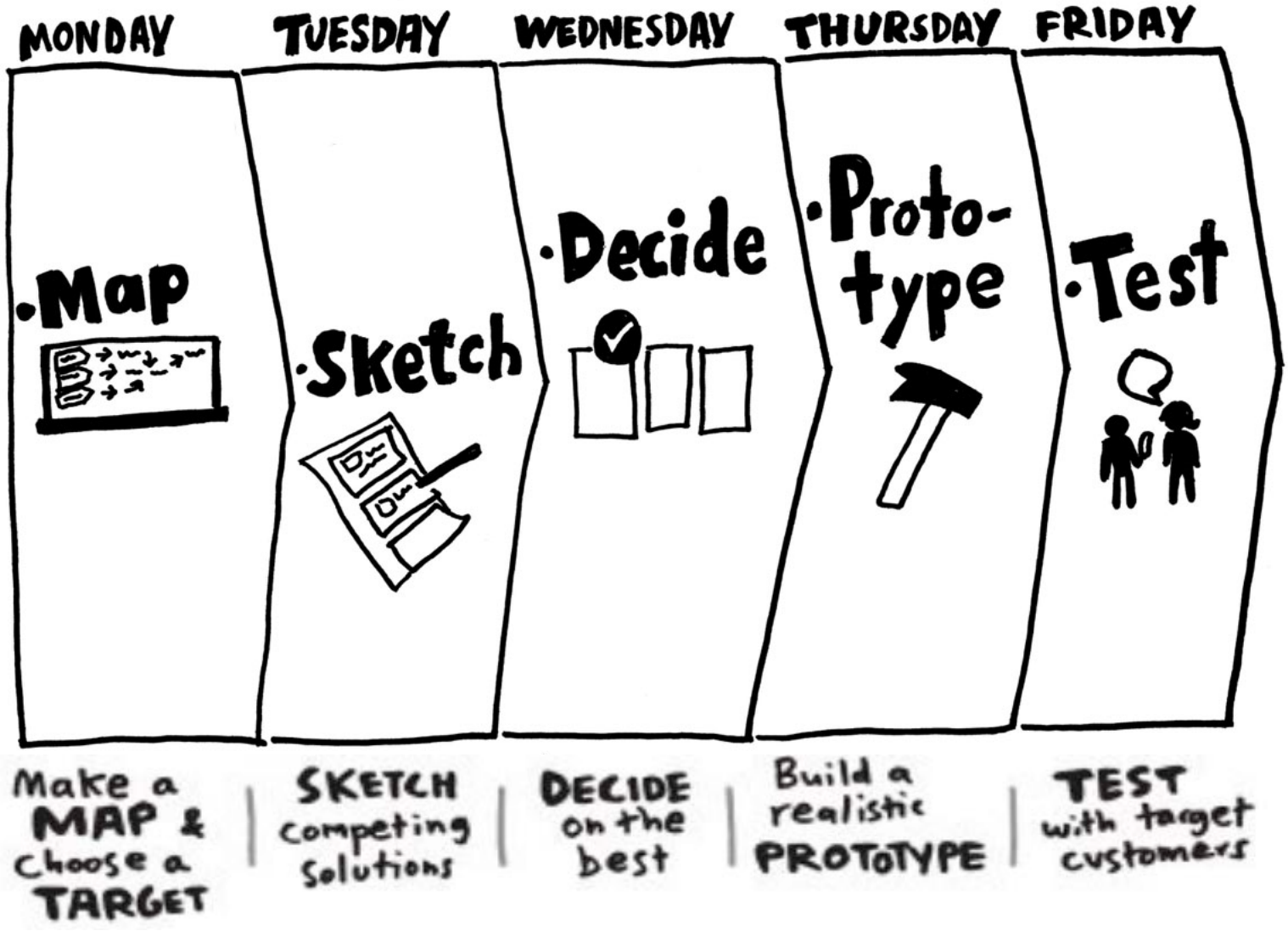
Source: Tim Smith, , California College of the Arts



The Design Sprint – Innovation within 5 Days

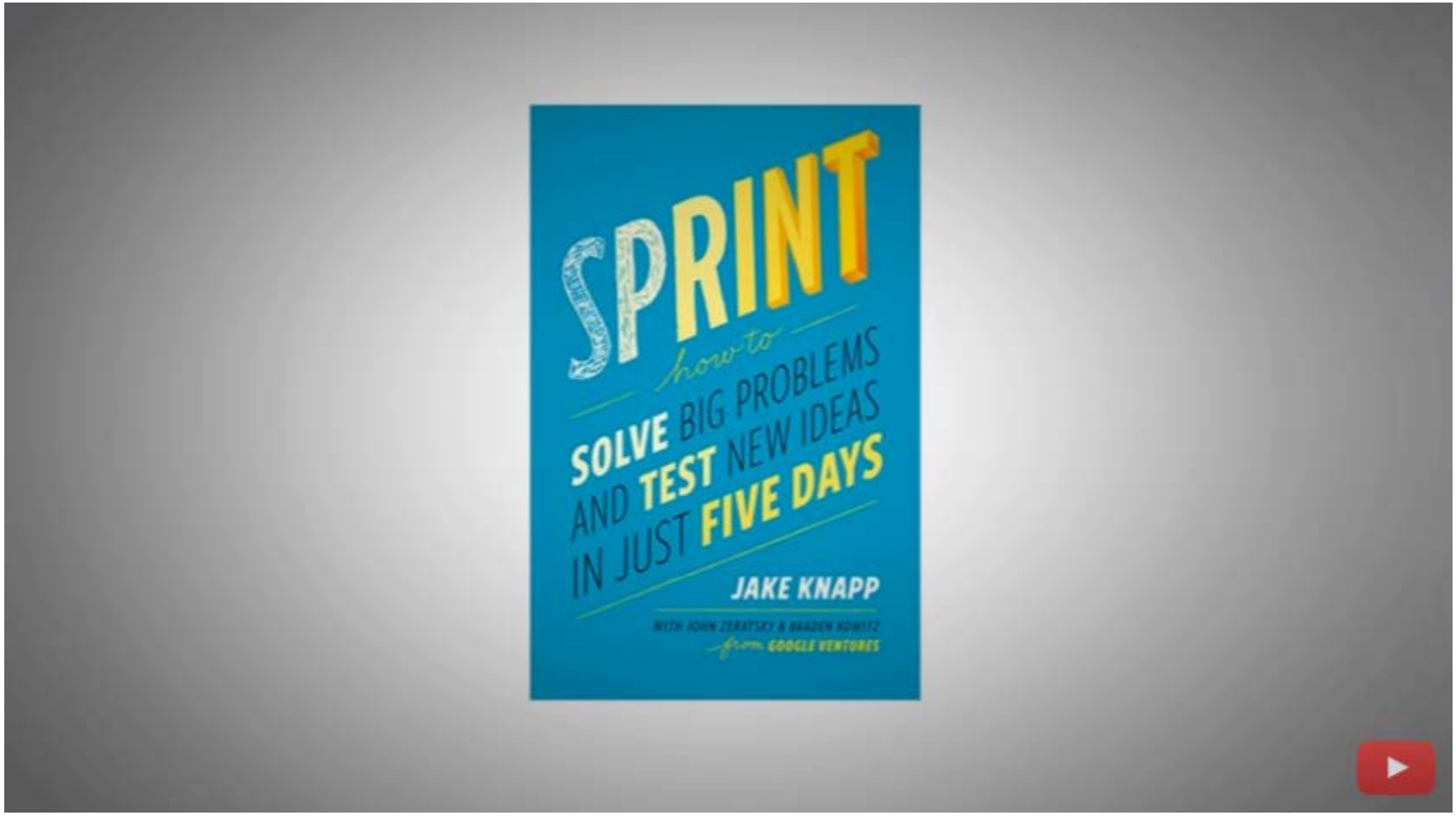
Resources: http://www.gv.com/sprint/

The Week


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
·Map
·Sketch
·Decide
·Proto-type
·Test
Make a MAP & Choose a TARGET
SKETCH competing solutions
DECIDE on the best
Build a realistic PROTOTYPE
TEST with target customers

SPRINT by Jake Knapp, John Zeratsky, Braden Kowitz | Animated Summary

https://youtu.be/AuktI4lBj6M



Set the Stage

Choose a big challenge

Recruit a sprint team and decider

Block five full days on the calendar

Book a room with two whiteboards

Get sprint supplies: Markers, post-its, dot stickers

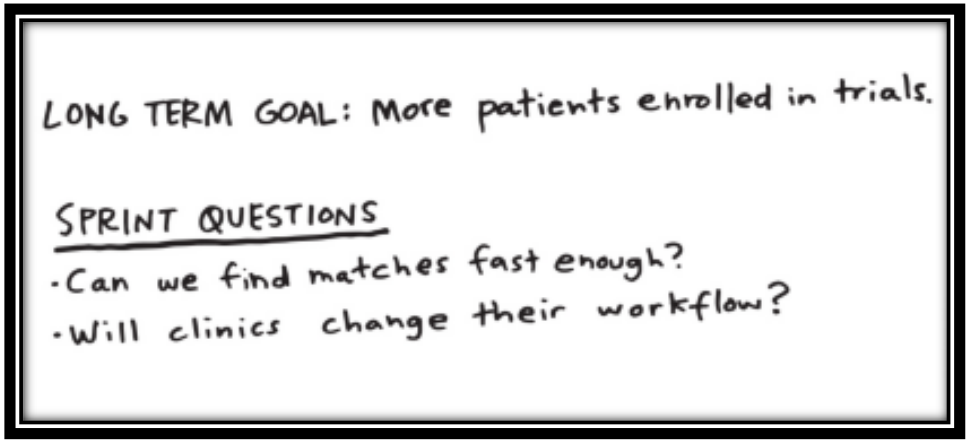
Schedule Interviews with customers

Monday

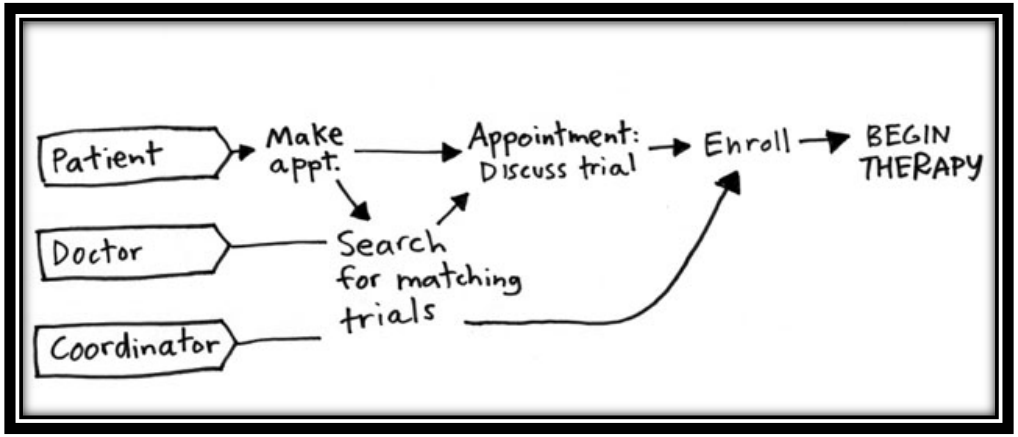
- Understanding the problem
- Choosing a target for the week’s efforts
- Share knowledge
- Do **not** start with the solution – build the foundation first

Monday Morning

- Start at the end: long-term goal

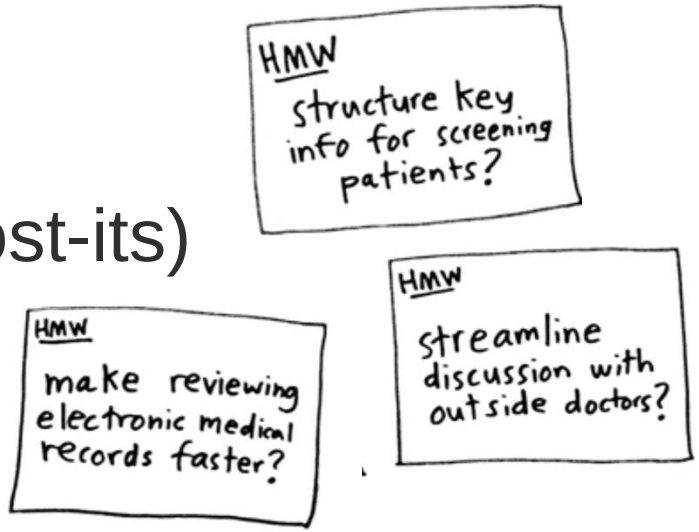


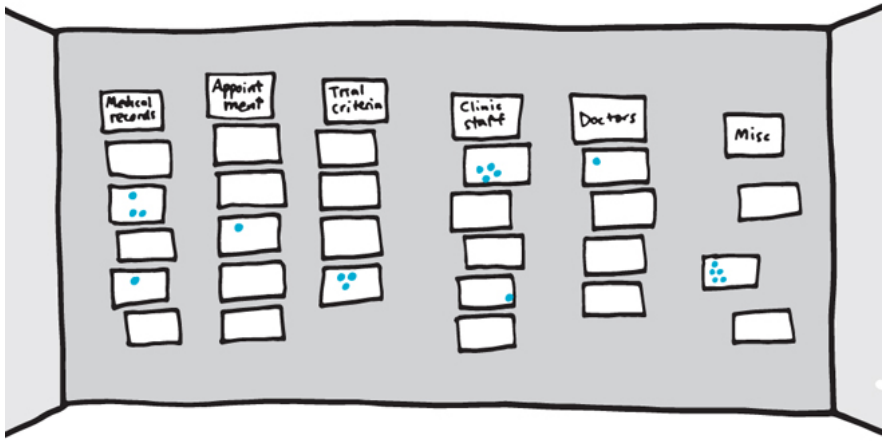
- List all questions, risks, assumptions
- Make a map: How a customer moves through your product/service



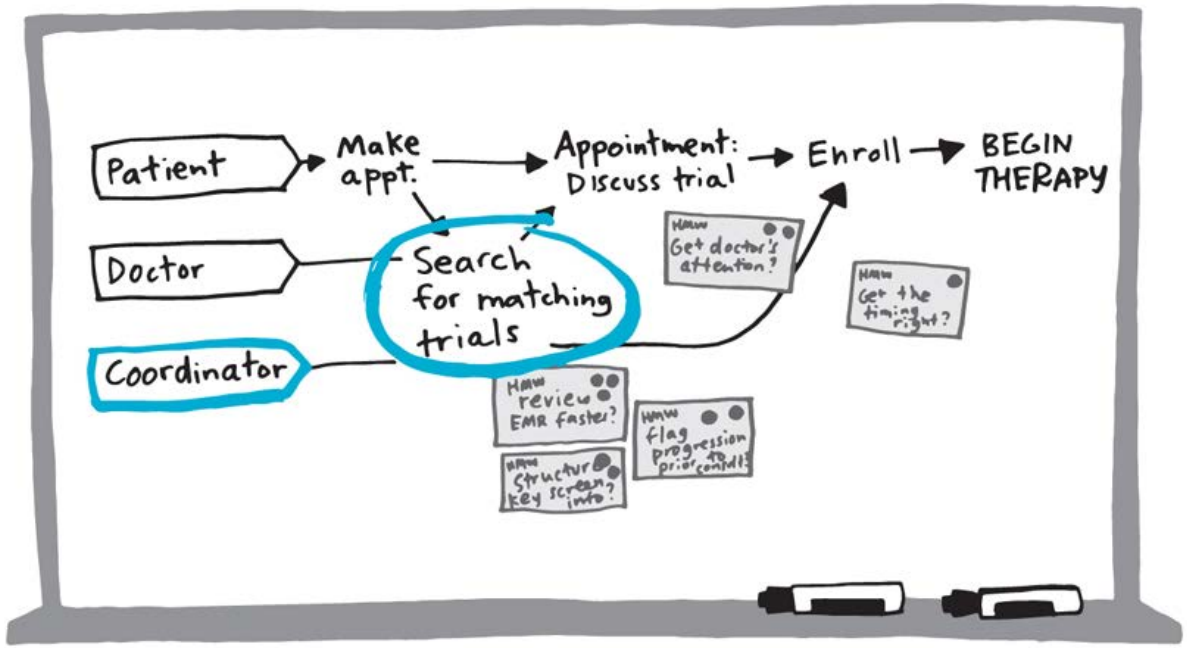
Monday afternoon

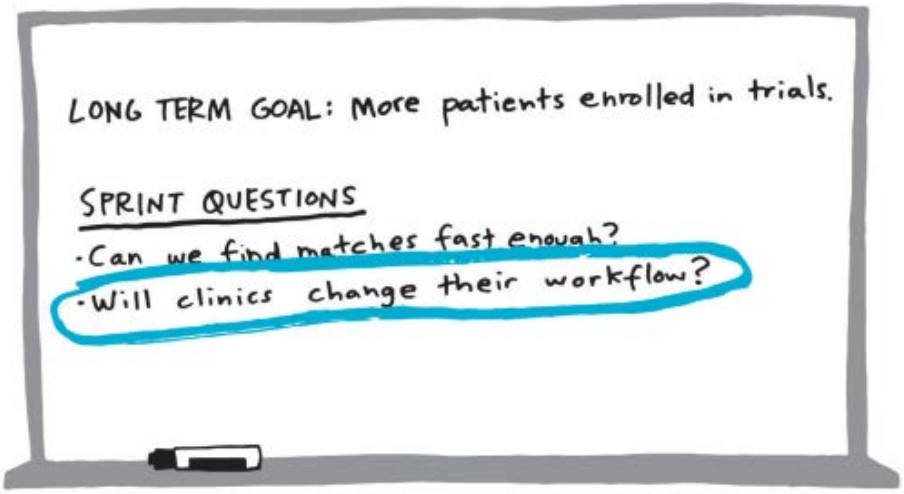
- Ask the experts
- Take notes: «How might we» HMW (post-its)
- Organize HMWs (wall, whiteboard)
- Pick a target
  - ♦ one specific customer
  - ♦ one specific spot on the map
  - ♦ which of the questions do you want to answer?





The Result of Monday

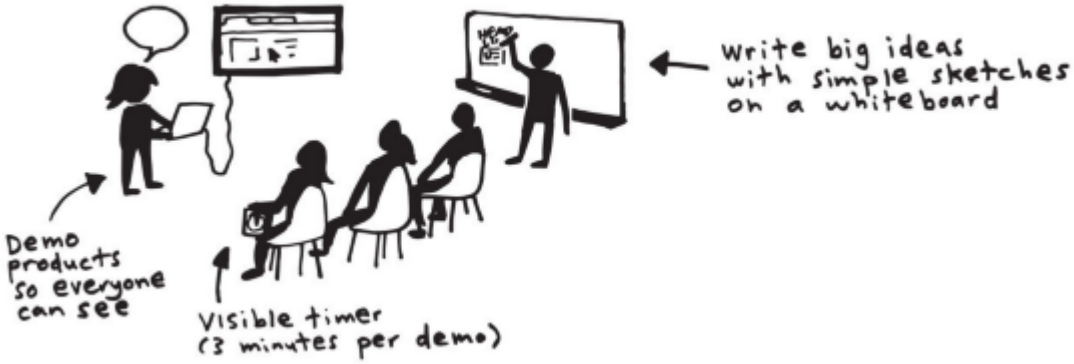




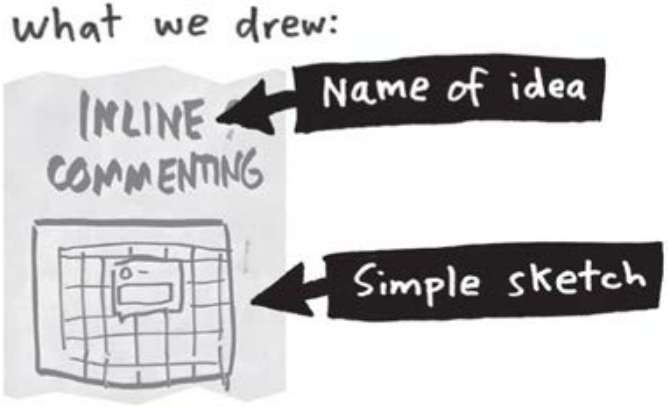
Tuesday

- Sketch the solution

Tuesday Morning

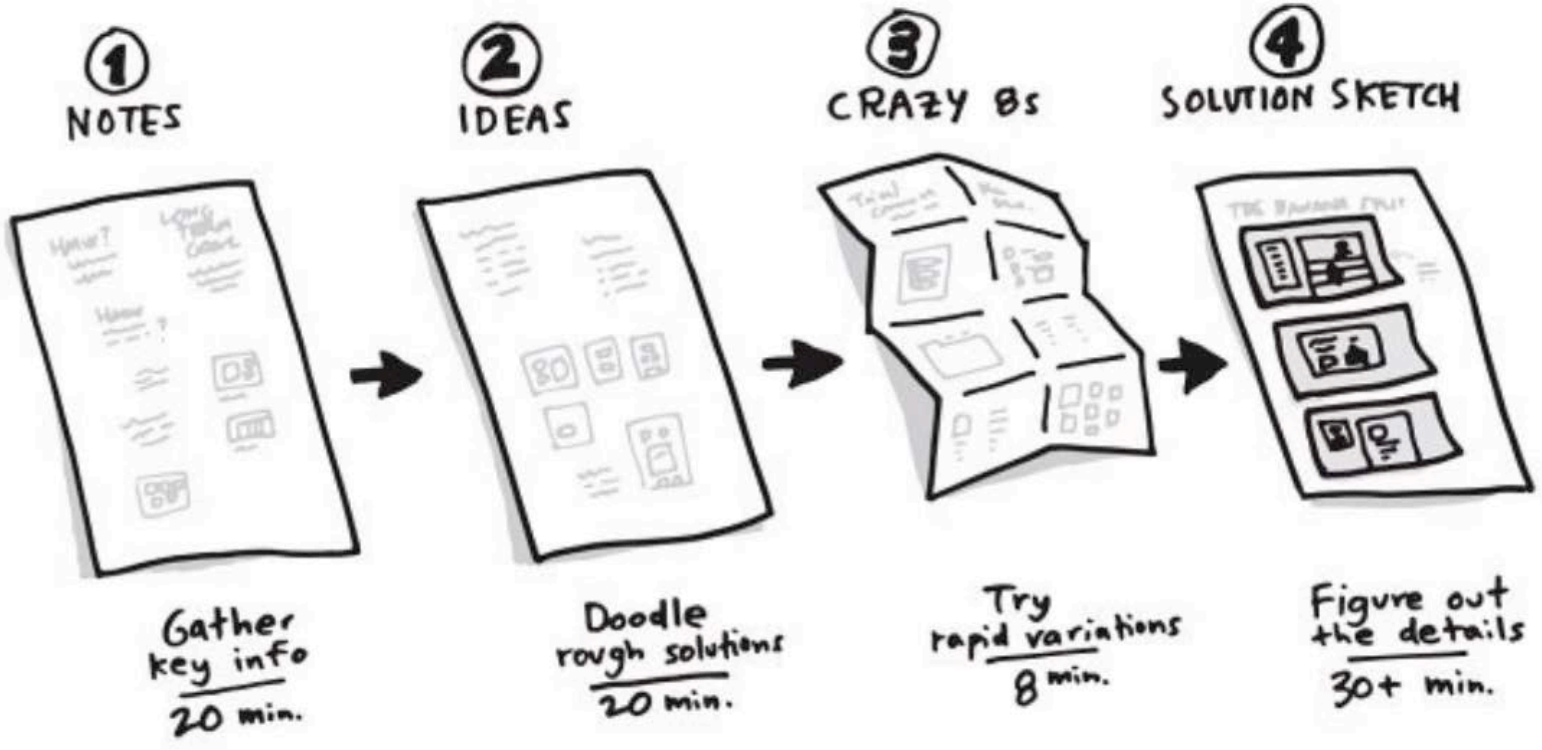


- Lightning Demos
  - Review great solutions from other industries, companies or even old ideas you already had
  - Capture Ideas



Tuesday Afternoon

- Sketch

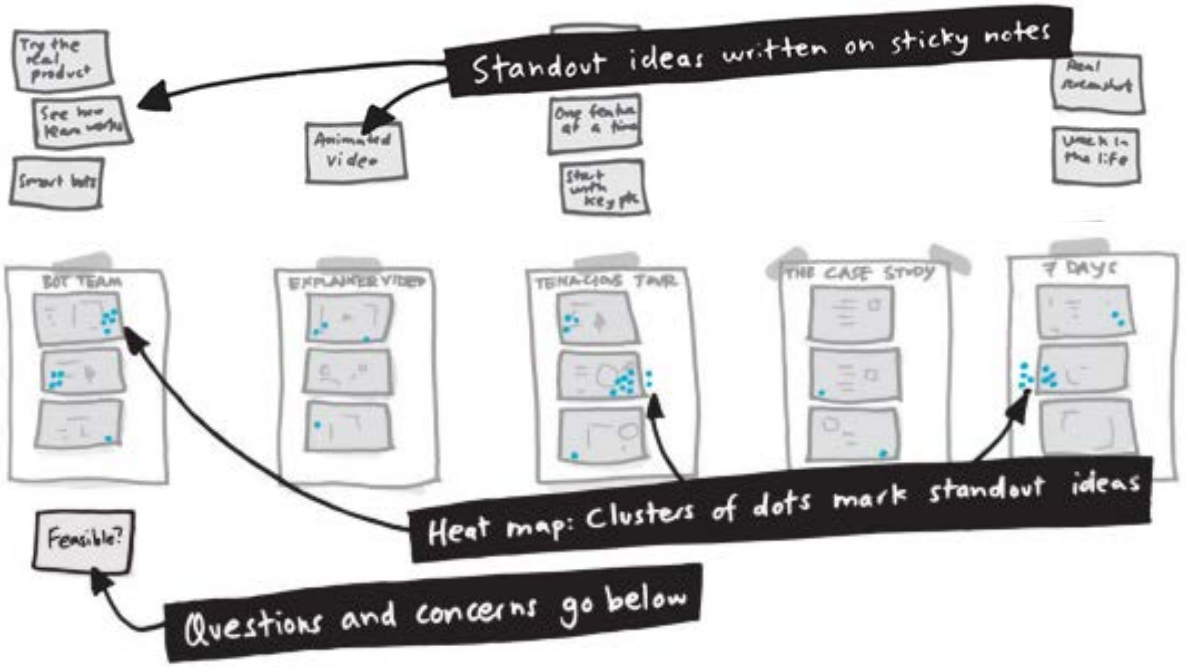


Wednesday

- Blueprint for the prototype
  - ♦ No time to invest in group think and long discussions
  - ♦ quick good decisions with lots of input, with an opinion-aided viewpoint from the decider

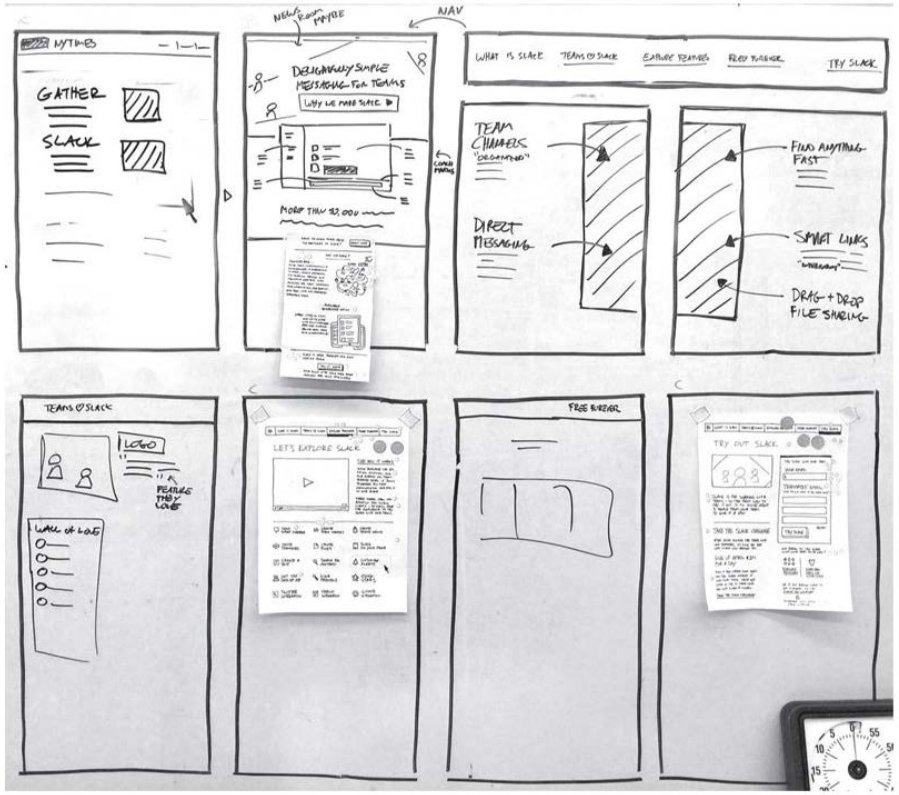
Wednesday - Morning

- Sticky decisions
  - ♦ Review sketches in silences – use dot stickers
  - ♦ Speed critique
  - ♦ Decider decides which ideas to include in the prototype



Wednesday - Afternoon

- (Rumble: Competition between different prototypes)
- Storyboard
  - Blueprint for the prototype(s)
  - Take the ideas, put them on the whiteboard, fill gaps



Thursday

- Prototyping Day
  - ♦ Build a facade
  - ♦ Use anything that gives good impression ,e.g.
    - Powerpoint presentation

Friday

- Trial
  - watching how customers react to your prototype
  - interview while showing the prototype
- Learn
  - Rest of the group watches and makes notes
  - Look for patterns of success and failure
- Make a plan
  - what to do next

Videos

https://youtu.be/Fc6A2WuEkZI

https://youtu.be/7zOBMxRYJ7I

https://youtu.be/_ITJ5lAXQhg

https://youtu.be/7BKBFOOKbNo

https://youtu.be/IGcwFV76t7o

https://youtu.be/jQmBuKN10VY